223 N. Western Ave.
Peoria, Illinois 61604
October 31, 1978

Dr. Maxine Singer
Building 37 4A-01
National Institutes of Health
Bethesda, MD 20014

Dear Dr. Singer:

I am currently engaged in an independent study in genetics at Illinois Central College, under the guidance of Thomas E. Zettle, making a literature search on recombinant DNA: history of research up to the present time, regulation of research, and possible contributions of recombinant DNA to medical and scientific fields. I would sincerely welcome your comments on any of the below listed aspects, as your time might allow.

A. Fear has been expressed that there has been too little concern about the impact of recombinant DNA on evolution. If evolution were accelerated or altered, would natural selection, perhaps also accelerated, still operate to protect us from the bizarre life forms envisioned by some? Please address specifically the potential problem of crossing the so-called prokaryotic-eukaryotic barrier.

B. Some comment has been made that repair of defective genes at the reproductive cell level would limit our gene pool. Since nature limits the human gene pool by the early death of products of many genetic defects, will we increase the human genetic load significantly if we refuse to use recombinant DNA techniques to produce normal genotypes, and instead continue to screen, treat, and produce normal phenocopies that continue to pass on the genetic disease?

C. Reservations about shotgun experiments and the possibility of producing novel pathogens seem to have decreased in the few short years between the original NIH guidelines and their subsequent revision. Do you think that in this short span of time hard evidence has been produced of the safety of such recombinant DNA work, or could there have been deliberate or unconscious avoidance of potential risk on shotgun experiments, so that the United States can join the worldwide recombinant DNA competition?

D. Do you believe that the revised NIH guidelines are sufficient? Many recombinant DNA researchers are supposedly involved in the formation of a West Coast corporation called Cetus, hoping for a head start on commercial genetic engineering. Abbott Labs pleaded no contest to an indictment charging them "with conspiracy to sell and with selling contaminated intravenous fluids that were associated with 9 fatal and 150 non-fatal blood poisonings." Eli Lilly refused to take diethylstilbestrol off the market, even after the drug was linked to cancer, and allegedly had also given DES to an experimental group without their knowledge.

Hoffman-LaRoche was responsible for the release of a deadly gas in Italy and concealed the news of the leak for some time. These very same firms are gearing up for recombinant DNA research. Do you feel that voluntary regulation will be adequate for industrial control in light of such past history, or do you believe that some form of federal legislation, perhaps identical with the NIH guidelines, is indicated?

E. Some of the recombinant DNA work in Europe is being done at lower containment levels than would be required under NIH guidelines and using B. subtilus as the cloning vehicle. Do you think this presents unnecessarily increased risks as compared to the use of E. coli in the United States?

F. Dr. Norton Zinder has said that critics of recombinant DNA are "idealogues emotionally against the idea of ever using genetic technology." (Cited in "Minimizing the Risks of Genetic Engineering," Business Week, August 9, 1976, p. 67.) Do you agree with this statement?

Thank you for consideration of my questions. I look forward to your reply.

Yours truly,

Carolyn E. Kemp

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